

WHAT IS CLAIMED IS:

1. An optical line terminal device comprising:  
an optical transmitter that receives downstream information, and  
5 outputs a plurality of downstream light pulses that represent the downstream information;  
an optical receiver that receives a plurality of upstream light pulses and converts the upstream light pulses into upstream information; and  
10 a controller connected to the optical transmitter and the optical receiver, the controller including:  
a memory having a plurality of first memory cells that store a first identification number and a second plurality of memory cells that store a second identification number, the first identification number representing a first optical device that is associated with a network end point, the second identification number representing a second optical device that is associated with the network end point, the second optical device being a replacement for the first optical device; and  
15 a processor connected to the memory that prepares the downstream information for the optical transmitter, and receives the upstream information from the optical receiver.
2. The device of claim 1 wherein the downstream information includes the first identification number when the first optical device is connected to the network end point, and the second identification number when the second optical device is connected to the network end point.
3. The device of claim 2 wherein the first identification number is removed from the downstream information and replaced with

the second identification number when the first optical device fails to respond to the downstream information.

4. The device of claim 2 wherein the first optical device is an  
5 optical network terminal.

5. The device of claim 4 wherein the second optical device is an optical network terminal.

10 6. An optical line terminal device that comprises:  
optical transmitter means for receiving downstream information,  
and outputting a plurality of downstream light pulses that represent the  
downstream information;  
optical receiver means for receiving a plurality of upstream light  
15 pulses and converting the upstream light pulses into upstream  
information; and  
controller means, the controller means including:  
memory means for storing a first identification number and  
a second identification number, the first identification number  
20 representing a first optical device that is associated with a network end  
point, the second identification number representing a second optical  
device that is associated with the network end point, the second optical  
device being a replacement for the first optical device; and  
processor means connected to the memory means for  
25 preparing the downstream information for the optical transmitter, and  
receiving the upstream information from the optical receiver.

7. The device of claim 6 wherein the downstream information  
includes the first identification number when the first optical device is  
30 connected to the network end point, and the second identification

number when the second optical device is connected to the network end point.

8. The device of claim 7 wherein the first identification  
5 number is removed from the downstream information and replaced with  
the second identification number when the first optical device fails to  
respond to the downstream information.

9. The device of claim 7 wherein the first optical device is an  
10 optical network terminal.

10. The device of claim 9 wherein the second optical device is  
an optical network terminal.

15 11. A method of operating an optical line terminal (OLT), the  
method comprising the steps of:

periodically sending a first message to a first optical device, the  
first message including a first identification number;

20 determining whether the first optical device has failed to respond  
to a predetermined number of first messages; and

sending a second message with a second identification number  
that represents a second optical device when the first optical device fails  
to respond to a number of first messages.

25 12. The method of claim 11 and further comprising the steps  
of:

determining if the second optical device has responded to the  
second message with the second identification number; and

marking the second identification number as an active identification number when the second optical device responds to the second message.

5        13. The method of claim 12 and further comprising the steps of:

      determining if the second optical device has responded to the second message with the second identification number; and

10      sending a third message with the first identification number that represents the first optical device when the second optical device fails to respond to a number of second messages.

14. The method of claim 13 and further comprising the steps of:

15      determining if the first optical device has responded to the third message with the first identification number; and

      marking the first identification number as an active identification number when the second optical device responds to the third message.

20      15. The method of claim 13 and further comprising the steps of:

      determining if the first optical device has responded to the third message with the first identification number; and

25      sending the second message with the second identification number that represents the second optical device when the first optical device fails to respond to a number of third messages.

16. The method of claim 11 wherein the first optical device is an optical network terminal.

30

17. The method of claim 16 wherein the second optical device is an optical network terminal.

18. A method of servicing a network, the network having a  
5 first optical device associated with a network end point, the first optical  
device having a first identification number, the method comprising the  
steps of:

associating a second identification number with the network end point, the second identification number representing a second optical device that is a replacement for the first optical device; and

10 dispatching a technician to the network end point to service the network end point.

19. The method of claim 18 and further comprising the steps

removing the first optical device from the network end point; and  
installing the second optical device to the network end point.

20. The method of claim 18 and further comprising the steps  
20 of:

inspecting the first optical device and determining whether the first optical device can be fixed within a predefined period of time;

fixing the first optical device when the first optical device can be fixed within the predefined period of time;

removing the first optical device from the network end point when the first optical device can not be fixed within the predefined period of time; and

installing the second optical device to the network end point after the first optical device has been removed.